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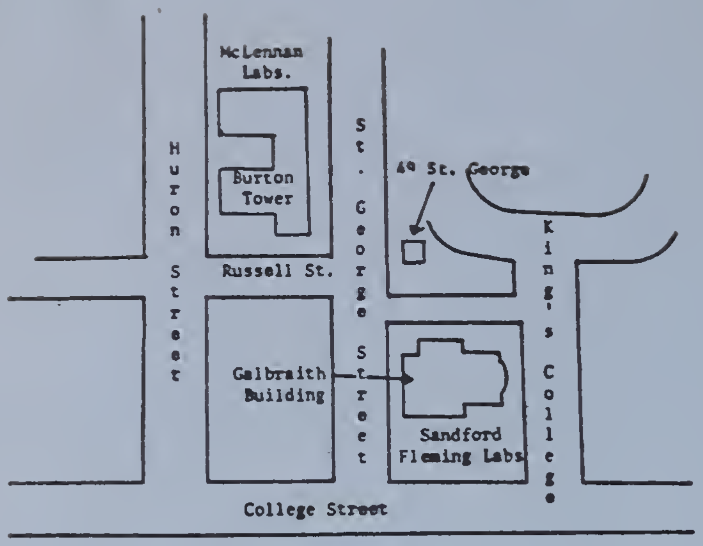
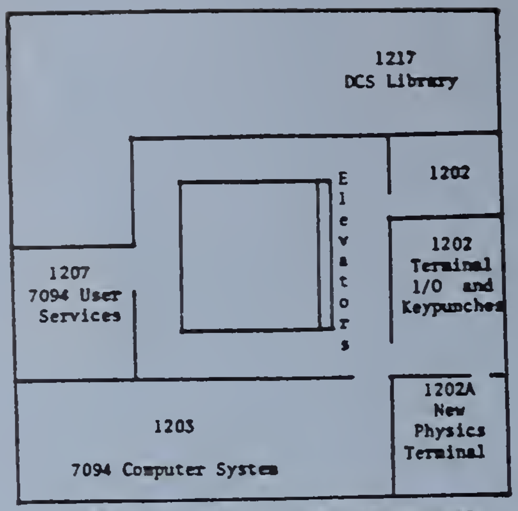
COMPUTERNEWS

University of Toronto

April 74

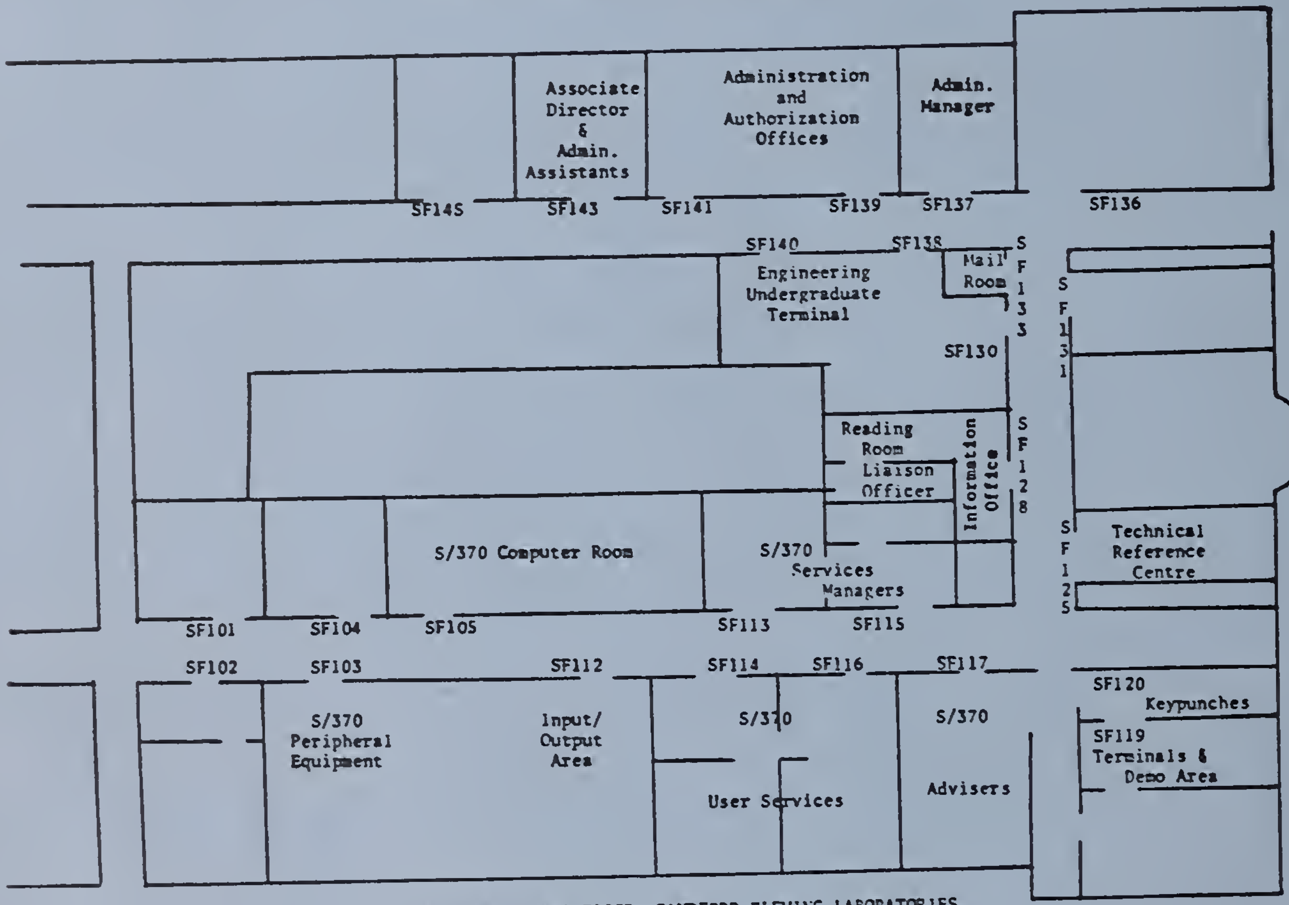
No. 111



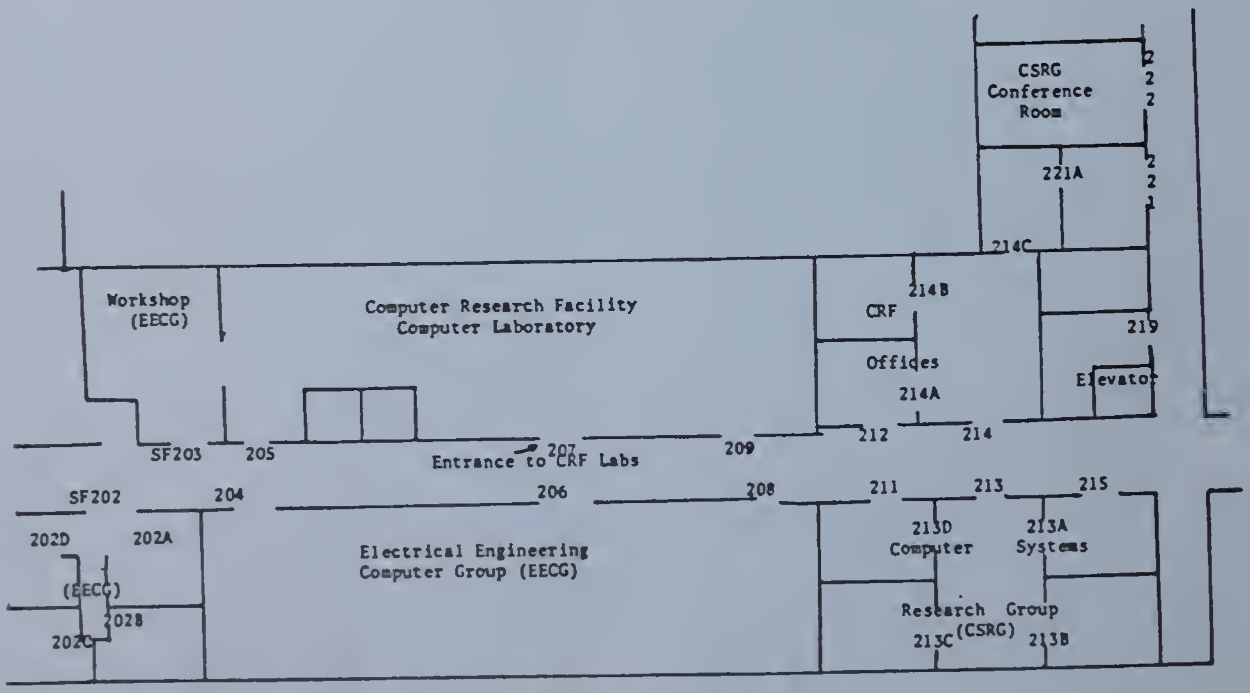


FLOOR PLAN: TWELFTH FLOOR, BURTON TOWER

UNIVERSITY OF TORONTO COMPUTER CENTRE



FLOOR PLAN: FIRST FLOOR, SANDFORD FLEMING LABORATORIES



FLOOR PLAN: SECOND FLOOR, SANDFORD FLEMING LABORATORIES

FUTURE COMPUTER SERVICES

The Computer Centre is aware of a demand on the campus for certain services based on machines other than those presently at UTCC. In an attempt to assess this market, we have sent a memorandum to all University of Toronto staff requesting suggestions on such services together with forecasts of use. Additional copies of the memorandum may be obtained from local Terminal Coordinators or from the UTCC Information Office (Room 128 Sandford Fleming Building).

John Wilson

PERSONNEL CHANGES

Good luck to Larry Lantz, Bill Hayes, Charles Davis and Leslie De Cunha, as they are leaving the Centre this month. We wish them success in the paths they follow.

Joining us this month are Carol Lang, the new secretary with CRF, and Krishna Patnaik, the new Lab Co-ordinator with CRF. David Ming-Sun, a computer operator, is with Interactive Systems. Welcome to all and hope you will enjoy working with us.

Please note an amendment to last month's column. Ernst Goetz is not with 7094/Services but is working on a special project called UTCC DATATALK. Apologies to all concerned.

Trudy Holland

APL MINI SYSTEMS NOW ECONOMICAL

Using software developed by the Liaison Office it is now quite quick and economical to implement data bases of information on the Interactive APL system. The input of information can be easily and quickly accomplished by any secretary using a typewriter terminal in her office. The information can be retrieved, corrected, summarized or printed out with a great deal of flexibilty. It is also quite simple to execute an APL programme which initiates the transfer of any or all of the data to the 370 model 165 where it can be processed using any standard batch programmes and the output moved to any of the remote job terminals connected to that system, or back to the interactive system. Thus, data which is now being coded on the coding sheets and keypunched can be directly entered by a typist and the equivalent card images translated by remote batch processing. For further information please contact the UTCC Liaison Office at 928-2694.

Bill Greene

COMPUTER RESEARCH FACILITY MANAGER APPOINTED

Dennis Smith former Assistant Manager of the Computer Research Facility has been promoted to Manager of CRF. The primary role of the Computer Research Facility is to support those activities

...cont'd

CRF MANAGER APPOINTED Cont'd...

which require services not provided by the batch or timesharing systems. The 360/44 is to be phased out. However, the specialized support required for graphics and data acquisition will be provided by PDP-11 systems or on the 370/165 system. The Computer Research Facility is making a special effort to provide users of mini-computers, special terminals and computer communications with a focal point for information, consultation, and services in these areas.

Al Heyworth

SUMMER INFORMATION OFFICE HOURS

New Information Office hours went into effect on April 29, when the Information Office changed to its summer schedule. The hours of operation are:

Monday through Thursday	9 a.m.--9 p.m.
Friday	9 a.m.--5 p.m.
Saturday	9 a.m.--1 p.m.
Sunday	Closed

These hours will be in effect through Tuesday, September 3, at which time we will resume the winter schedule.

Bill Greene

COMPUTER ASSISTED LEARNING COORDINATOR APPOINTED

Until now, support for Computer Assisted Learning (CAL) on the St. George Campus has been provided by Ford Clancy who was shared with the Erindale Campus. With the growth of interest and activity in CAL using APL Interactive Services on the St. George Campus I am pleased to announce that Ford Clancy now has a full time appointment as Coordinator for Computer Assisted Learning with the Interactive Services Group.

Al Heyworth

DEC SYSTEM-10 SEMINAR

Representatives of Digital Equipment of Canada Ltd. gave a seminar on their System-10 on March 19 at which DEC's APL was also described.

The DEC System-10 family represents a wide range of computing power and capabilities under one operating system, with one user command language, and modular, easily expandable hardware. The hardware and software were designed together to efficiently handle:

-Multiprogram Batch
-Remote Batch
-Timesharing
-Real Time tasks
-Dual Processors

...cont'd

DEC SYSTEM-10 SEMINAR Cont'd...

This integrated system of hardware and advanced multi-task operating system provides the computer user with a high level of performance for all classes of users; the operating system is written to assume that it can do a far better job of allocating resources dynamically than any system operations staff. After years of development, the operating system provides very comprehensive facilities to all classes of users; the timesharing user has a powerful command language and a choice of language processors, including FORTRAN, ALGOL, COBOL, BASIC, MACRO (Assembler), SNOBOL, LISP and APL. Utility programs include a wide range of online editing, debugging and file copying programs. The advanced file handling system is used by all processors (including APL); files can be shared and/or protected against unauthorized access (eight levels of protection in three classes). The file organization is completely independent of both the device and the access method; in fact, different users can access a shared file by different methods. Allocation is also flexible; file space can be allocated upon user demand or pre-allocated; file access is optimized. Data can be passed between active users by using the 'pseudo-teletype' feature. The multiprogram batch user has the same services available as the interactive users, and can operate his programs from local peripherals, remote stations or interactive terminals; in addition, the users can specify many processing parameters, including start and completion dates and times, order of program execution, and recovery action in case of error. Throughput of batch jobs is optimized by a large number of DEC System-10 features, inherent to a timesharing system.

All system resources such as processor time, memory space, file storage space, hardware and software are allocated dynamically as directed by change in the system load. Software is re-entrant; virtual storage is implemented via hardware paging (dynamic address translation). The monitor allocates memory, magnetic storage, peripherals, and processing time among system users, employing an adaptive scheduling algorithm to dynamically adjust system operation.

The real time user has a choice of response modes. One provides micro second response to interrupts while another provides milli second scheduling of jobs in high priority run queues. On-line data acquisition, for example, might be performed by the first, while reduction of the data -- a less critical task -- could be handled by the second. Multiple real-time users can be accorded other privileges by the system administrator -- such as the ability to lock a job in core for fast response. Real time programs may be written in either FORTRAN or assembly language. The interrupt system is very flexible -- prioity levels are software assignable.

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DEC SYSTEM-10 SEMINAR Cont'd ...

The processor(s), memories and peripherals operate asynchronously; interfacing of non-standard I/O devices is relatively simple; standard interface routines exist. DEC mini computers are particularly easy to interface. The processor (KI 10) has a 378 hardware instruction repertoire, including double precision floating point, variable length (1 to 36 bit) byte manipulation and half word instructions. Thirty-six-bit word length is used for arithmetic operations and data transfer.

The Dec System-10 is an elegant system from every user's point of view -- timesharing, multiprogram batch, real time or remote station users all find that their type of work can be performed efficiently on this computer.

John Phillips

UNIVAC COMPUTER SEMINAR

On April 9th, representatives of SPERRY UNIVAC, Canada, presented a seminar on the hardware and software characteristics of the UNIVAC 1100 Series; a presentation and an on-line demonstration of UNIVAC's APL were also provided.

The UNIVAC 1100 Series currently consists of three large scale computer systems: the 1106, 1108 and 1110. The three systems are upward-compatible and share the same peripheral equipment and software.

The 1100 Series competes against the IBM System/370, Models 145, 158 and 168, the Honeywell Series 6000, the Burroughs B6700, and the Control Data Cyber 70, Models 72, 73 and 74.

The series provides for true multiprocessing and modularity. Sharing common memory and subsystems, the 1106 is e xpandable to two processors, the 1108 to three processors, and two I/O Controllers and the 1110 to six processors, and up to four I/O Access Units (each of the latter can accomudate 24 I/O channels, giving a total data rate of up to 24 million characters/sec).

Main memory for the 1106 and 1108 is expandible to 262,144 36 bits words with cycle time of 1.0 and 0.75 micro seconds respectively. The 1100 has two levels of directly addressable storage, i.e. -- main memory of up to 262,144 36 bits words with a cycle time of 320 nano seconds and extended memory of up to 1,048,566 36 bit words with a cycle time of 1.5 or 0.75 micro seconds.

Other features of the UNIVAC 1100 systems are:

-Large, modular, parity checked, high speed main storage.

-Program address relocation, and storage protection.

-Two real time clocks and a powerful interrupt system.

-Partial word addressability in 6, 9, and 12 and 18 bit portions as well as full word (36 bits) or double-word (72 bits) addressing.

...cont'd

UNIVAC COMPUTER SEMINAR Cont'd...

-Privileged mode for the Executive System and a group of registers accessible only to the Operating System.

-Guard mode for user programs.

-128 high speed control registers including 16 accumulators and 15 index registers.

-High speed, random access auxiliary storage (e.g. 4.3 milliseconds average access time for Fixed Head 432 drum).

Software

The 1100 Operating System is the standard operating system for all members of the 1100 series; it furnishes comprehensive supervisory and control facilities for the following simultaneous modes of operation:

-Batch
-Demand (or timesharing)
-Real-Time
-Multiprocessing
-Multiprogramming

It provides virtually the full gamut of desirable operating system facilities, including:

-dynamic storage allocation
-re-entrance
-multiprocessing
-dynamic reconfiguration
-automatic recovery
-multi-level priorization
-system optimization

It also provides two types of segmentation, one of which provides software-controlled virtual storage.

The software facilities that operate under the control of the 1100 Operating System include processors for COBOL, FORTRAN, ALGOL, BASIC, JOVIAL, PL/1, and ASSEMBLER languages, plus a variety of utility routines and application packages.

UNIVAC also provides four components for a total information management system, which include Data Management System (DMS), Communication Management System (CMS), a Transaction Interface Package (TIP), and a Conversational Time-Sharing System (CTS).

UNIVAC's APL is a re-entrant high speed processor. It is an in-house product which is continuously being enhanced. For example, in the release next month, APL will have a complete set of system variables and procedures. In addition, APL will offer the shared variable facility.

APL also provides for a multitude of different character sets as well as the standard APL character set which can be created by the user. Another feature of UNIVAC APL provides for dynamic expansion and contract of the user workspace area.

With the system procedures CR and Fx, the capability to design customized APL functions exists. may therefore design his own user function handling capability to suit any format he desires.

John Phillips

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HOURS OF SERVICE -- VICTORIA DAY WEEKEND

The following hours of service will be in effect for System/370 Services users during the Victoria Day weekend:

	May 18 (Saturday)	May 19 (Sunday)	May 20 (Monday)
Sandford Fleming Terminal (SF112)	9am - 5pm	9am - 5pm	closed
EUT/ASUT	9am - 5pm	9am - 5pm	closed
AST	9am - 5pm	9am - 5pm	closed
TSO	9am - 5pm	9am - 5pm	closed

Normal Hours of Service will resume on Tuesday, May 21.

Users of other terminals should consult the Terminal Co-ordinator for hours of service on Saturday and Sunday at these sites.

Don Gibson

VS COMPONENTS AVAILABLE

UTCC has available a pre-release of the virtual system utilities, the assembler, and the Linkage Editor. Some of these programs are expanded from current OS values. These changes will be documented in the future, but if you are interested in trying a 'VS' component, call Herb Kugel at 928-7286.

Herb Kugel

TSO TOPICS

In accordance with its desires to support a wide range of terminals on TSO, 370 Services has implemented an improved ASCII translate table. This table provides support for a number of new characters on TTY compatible terminals. It is accessed by preceding the LOGON sequence with a 'tilde' or 'squiggle' character. The new translate table supports TEKTRONIX graphic terminals and extends the character support for VUcom and similar terminals. 370 Services is working on a full ASCII translate table and invites users to make their requirements and problems known.

Users are again invited to contact Ian with suggestions, criticisms, problems, or whatever (telephone 928-7281, or stop in to SF116).

Ian Darwin

ONLINE DATASET MIGRATION SYSTEM

exeriencing problems with the continued growth of online datasets. Examples of the problems are increasing physical space requirements and increasing resource utilization for backups.

To solve these problems, System/370 Services will install an automatic dataset migration system on May 12, 1974. Initially only TSO created datasets will be affected (these datasets represent

...cont'd

ONLINE DATASET Cont'd...

a significant portion of the total and are responsible for the majority of the growth). TSO created datasets which have not been used for a specified period of time will be automatically migrated from the online disks to tapes. If a user wishes to use a dataset which has been migrated (a TSO command will provide this information), a TSO command will be used to restore the dataset to the online disks.

Users of TSO will be mailed further information about the online dataset migration system in the near future. Other interested users will be able to obtain the documentation in the Information Office.

Victor Peltz

NEW TERMINAL AT INSTITUTE FOR POLICY ANALYSIS

System /370 Services would like to welcome a new RJE Terminal location to the current network of terminals connected to the S/370-165.

The Institute for the Quantitative Analysis of Social and Economic Policy is the sponsor of a Remcom 2780 terminal (400 cards per minute and 480 lines per minute). The terminal is located at:

150 St. George Street,
Room 109, Coach House.

George Ugray (6018 or 6130) should be contacted for any further information.

Stan Yagi

CODING DATA

(Editor's Note: The following article is based on a similar article which appeared in the February 22, 1974, Vol. 7, No. 2 edition of the Northern Illinois University Computer Services *Computer News*.)

Following is a list of standard character conventions which should be used when coding on 80-80 forms for submission to Room 103 for the charged keypunch service. Using these conventions avoids possible errors in keypunching.

O	Zero	5	Five
Ø	Oh	S	Es
I	Eye	7	Seven
1	One	U	You
2	Two	V	Vee
Ƶ	Zed	$	Dollar sign

1. Fields to be duplicated should be indicated.

2. Any special instructions or keys for peculiarities should be written.

3. Writing or typing on forms should be dark enough and clear enough to be easily read.

Following these practices will enable us to serve you better½

Don Gibson

2314 DISK MOUNTS

The frequency of 2314 mounts on the two available 2314 drives has been increasing steadily over the last year. During this period, the number of rented/stored 2314 packs has decreased by about 15%. This implies that the frequency of mounting per user must be rising.

At present, S/370 Services provides two drives for mounting user rented or owned volumes. Unfortunately, S/370 Services cannot support increasing this number at this time. Users who are experiencing large queues awaiting an available 2314 drive should consider the merits of placing some of their more active datasets on online volumes. In addition to time saved, users frequently find an overall cost savings by eliminating the mount charges incurred with 2314 mounts.

Derry Cox

SPEAKEASY

Following is an exerpt from An Introduction to SPEAKEASY by S. Cohen and C.M. Vincent.

" SPEAKEASY is a user-oriented language. It is intended to provide scientists with the means of quickly formulating a problem for computer processing and for obtaining answers to their problems in a minimum of time. The language is easily learned since its form is similar to that of scientific mathematics. Furthermore it has built into its basic structure the commonly used operations of most scientific disciplines. The user may freely draw on a very large library of such operations and may thus formulate his problem with a very concise directive program.

In designing SPEAKEASY, every effort has been made to keep the language natural as viewed by the scientist. A scientist using SPEAKEASY need know little about a digital computer and, in particular, need never concern himself with the actual structure of the program as run by the computer. In a sense, SPEAKEASY is to be viewed as a humanized interface between a scientist and a computer; occurences that force the user to think about a digital computer rather than about his scientific problem are to be viewed as failures in the language.

Because of the concise and natural form of the language, it is very likely that a new program will give correct answers on the first trial. If this is not the case, extensive error-detection aids will provide enough information to make the second attempt almost certain to succeed. The user will therefore obtain an answer to his problem in a very short time."

A number of Computer Centre users from various installations

...cont'd

SPEAKEASY Cont'd...

are now using SPEAKEASY in an effort to evaluate its usefulness for their work. Users who wish to examine SPEAKEASY and who are willing to submit a report of their results should contact:

Mr. S. Yagi,
Manager S/370 Services,
Room 113,
Sandford Fleming Labs.,
928-7331

Bill Hayes

EXECUTOR

EXECUTOR has been running on the 370-165 since May of last year. Typically, between 80-85% of the non-intervention (class A) jobs are processed by EXECUTOR. As a replacement for the OS initiator, it provides much faster turnaround by using pre-allocated work datasets, writing only selected records to the job queue, and other time saving techniques. Jobs which cannot be processed through EXECUTOR are re-queued for normal OS initiation.

Most known OS incompatibilities have been corrected. There are two significant areas where problems still exist.

A) Condition Codes: - EXECUTOR will requeue jobs which specify ONLY or EVEN as Condition Code subparameters. However, EXECUTOR will attempt to process Condition Code subparameters which fall outside the preceding range. There is apparently an error in this routine which may cause steps to be executed when they should not be; or vice versa. This problem will be fixed in the next version of EXECUTOR. If you are experiencing EXECUTOR related Condition Code problems, please see an adviser. He will provide you with an appropriate bypass.

B) Work Datasets, Size and Secondary Allocation: - Presently there is a pool of 40 work datasets, each 50 tracks in length, for SYSDA and SYSSQ dataset allocation. All EXECUTOR work dataset allocation is done from this pool. EXECUTOR always allocates 50 track datasets regardless of the space specification parameter. Secondary allocation may be specified, but if the TOTAL exceeds 50 tracks the danger of X37 abends exists. Remember, 50 tracks total. 370 Services has been monitoring D37 abends and has found the frequency is very low. Experience and testing have shown 50 tracks to be a good choice for work dataset size for the average user. Users with large sorts, which require vast quantities of scratch space, have experienced problems in this area. Please see your local terminal coordinator or an adviser if encountering these problems. An appropriate bypass will be provided.

Dave Hart

METRIFICATION AND COMPUTING

As you are aware, both the Canadian and American governments are involved in large metrification programs. In the U.S., the problem of manufacturing to metric standards was addressed to the major data processing equipment manufacturers by the National Bureau of Standards Metric Study. However, there appears to have been little or no effort spent on an analysis of the impact of metrification on systems and software. Users writing or maintaining software packages which function on data in "British" units should keep the following points in mind.

(1) Data Field Sizes

Any metric unit will be more or less precise than the unit it replaces depending on whether the metric standard unit of measure is smaller or larger than the old unit. This affects data field sizes, e.g. a 2 digit data field may handle 0-99 miles. However, if this field is used for kilometres (0-99) the maximum physical length is now 99 km or about 62 miles.

(2) Accuracy

This difference in precision can affect numeric accuracy as well. For example output data in pounds(lbs.) expressed to 1 decimal place will have an accuracy of .05 lb. The same field size used for kg would have an accuracy of .05 kg or about .11 lb. which might not be acceptable in certain circumstances.

(3) Historical Data

Changes in units of measure may cause problems if output data from programs expressed in metric units (where previously they were expressed in "British" units) are used as input to forecasting or statistical analysis systems. Discontinuities in comparisons or performance measurements could result.

(4) Mathematical Algorithms

Programs with conversion factors built into the code may have to be modified to metric conversion factors.

In general, users who obtain data expressed currently in British units would be advised to determine whether new units of measure will affect their computations. Further references to the points raised above, and to this problem, may be found in an article by J. L. Pokorney in Proceedings of the Third Annual SIGCOSIM SYMPOSIUM published by the Association for Computing Machinery (ACM) October, 1972.

As a parting whimsy, consider the following (less than critical) data processing problem in British units and how much simpler things would be with metric units.

If 1 gallon of scotch weighs 10 lbs. and 1 cubic foot of soda weighs 62.5 lbs., how many bushels of computer card chips are there in a cubic yard? (Hint: Gallons are Imperial measure, the specific gravities of scotch and soda are both approximately 1 if the scotch is cheap enough and the soda is flat).

...cont'd

METRIFICATION Cont'd

If you wish, you may send your answer to: Contest, Room SF113B, 10 Kings College Rd.

Prize for the first correct answer: 1 Imperial gallon of computer card chips.

Derry Cox

S/370 RELIABILITY

Final statistics for the month of March indicate a marked improvement in system reliability over February's figures. This is mainly due to the 33% improvement in ITEL reliability. For March, the uptime percentage was 98.7 and the average number of unscheduled IPL's per day was 1.06. The scheduled hours of production for March totalled 537.

Last Year's Comparative Figures

MONTH	% Uptime	Unsch. IPL's Per day	Month	%Uptime	Unsch IPL's Per day
JAN 73	96.8	0.87	SEPT 73	86.8	3.63
FEB 73	98.3	1.18	OCT 73	95.6	1.83
MAR 73	97.8	1.16	NOV 73	98.1	0.93
APR 73	97.1	1.39	DEC 73	98.6	0.62
MAY 73	98.5	1.20	JAN 74	97.0	1.37
JUN 73	98.5	1.70	FEB 74	98.3	1.25
JUL 73	99.4	0.37	MAR 74	98.7	1.06
AUG 73	97.6	1.13			

The percentage breakdown of total system downtime for March was: HARDWARE = 189 minutes (45.4%); SOFTWARE = 144 minutes (34.6%); OTHERS = 83 minutes (20.0%). The major events contributing to these downtime totals were as follows:

March 4: 74 minutes of downtime were attributed to a HASP problem in which a User's job was passing bad parameters to the HASP internal retriever. Several IPL's were necessary before the bad job could be isolated. The internal retriever routine has been modified to prevent such occurrences.

March 6: 40 minutes of downtime were attributed to a software problem in which a program product utility, "CLEAN CATLG", altered destination pointers of several system data sets in the SYSCTLG. This utility has been withdrawn until modifications can be made to prevent this error from recurring.

March 11,19,20,22: A total of 87 minutes of downtime was attributed to double bit errors in the ITEL memory and the corrective maintenance required to replace the bad cards involved.

March 15: 35 minutes of downtime were attributed to a hardware probelm in which corrective or recoverable errors were being handled as non-retrievable or recoverable by Machine Check Handler. IBM has ordered a REA (informal engineering changes) in an attempt to isolate the problem.

Dave Rauch

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                     DOWNTIME_REPORT_ON___S/370__FOR_MAR_74

----------------------------------------------------------------------------------------------------------------------------
|                                                REIPLS(FREQ) // DOWNTIME (MN)                                             |
| DAY  REIPL   DNTIME 0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
======================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+|
| F  1      1       8 |□*******                                                                                            |
| S  2      0       0 |                                                                                                    |
| S  3      0       0 |                                                                                                    |
| M  4      3      74 |□□□***********************************************************************                          |
| T  5      0       0 |                                                                                                    |
| W  6      0      40 |****************************************                                                            |
| T  7      0       7 |*******                                                                                             |
| F  8      0       0 |                                                                                                    |
| S  9      0       0 |                                                                                                    |
| S 10      0       0 |                                                                                                    |
| M 11      3      27 |□□□************************                                                                         |
| T 12      0       0 |                                                                                                    |
| W 13      0       0 |                                                                                                    |
| T 14      0       0 |                                                                                                    |
| F 15      4      35 |□□□□*******************************                                                                 |
| S 16      0      17 |*****************                                                                                   |
| S 17      0       0 |                                                                                                    |
| M 18      1      18 |□*****************                                                                                  |
| T 19      3      20 |□□□*****************                                                                                |
| W 20      3      45 |□□□******************************************                                                       |
| T 21      1       8 |□*******                                                                                            |
| F 22      3      30 |□□□***************************                                                                      |
| S 23      2      14 |□□************                                                                                      |
| S 24      0       0 |                                                                                                    |
| M 25      1      14 |□*************                                                                                      |
| T 26      3      26 |□□□***********************                                                                          |
| W 27      0       0 |                                                                                                    |
| T 28      5      33 |□□□□□****************************                                                                   |
| F 29      0       0 |                                                                                                    |
| S 30      0       0 |                                                                                                    |
| S 31      0       0 |                                                                                                    |
----------------------------------------------------------------------------------------------------------------------------

 LEGEND     : ONE □  =ONE REIPL
              ONE *  =ONE MINUTE OF DOWNTIME


                       _S/370__DOWNTIMES_DURING_MAR_74

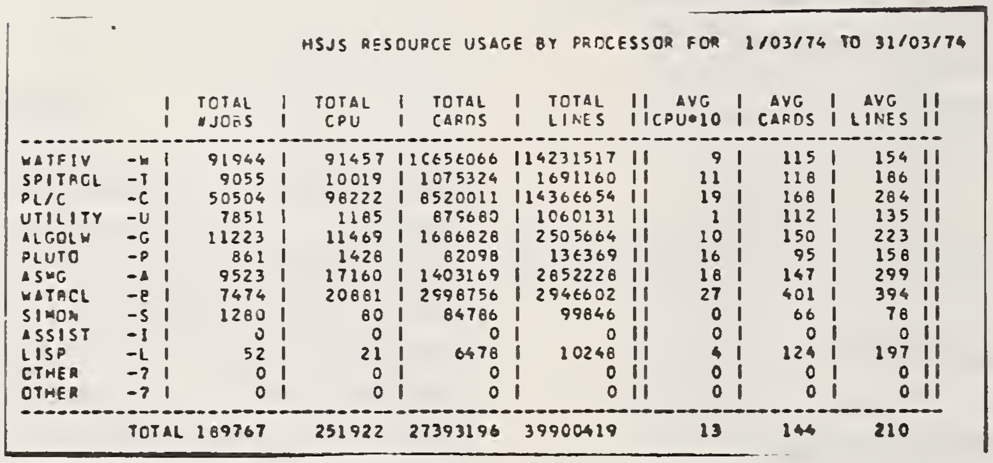
------------------------------------------------------------------------------------------------------------------------
|                                              TIME OF DAY (HOURS)                                                     |
|  DAY RELOADS DNTIME 0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
======================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+|
| F  1      1       8 |                                                                                  S             |
| S  2      0       0 |                                                                                                |
| S  3      0       0 |                                                                                                |
| M  4      3      74 | SS  SSSS                                                                                       |
| T  5      0       0 |                                                                                                |
| W  6      0      40 |                                III                                                             |
| T  7      0       7 |I                                                                                               |
| F  0      0       0 |                                                                                                |
| S  9      0       0 |                                                                                                |
| S 10      0       0 |                                                                                                |
| M 11      3      27 |                                H               HH                                              |
| T 12      0       0 |                                                                                                |
| W 13      0       0 |                                                                                                |
| T 14      0       0 |                                                                                                |
| F 15      4      35 |                                                     HH         H         H                     |
| S 16      0      17 |                                     I                                                          |
| S 17      0       0 |                                                                                                |
| M 18      1      18 |                                                                                      HH        |
| T 19      3      20 |   S                                       S                                                    |
| W 20      3      45 |I     H        HH                                                                               |
| T 21      1       8 |                                                                       S                        |
| F 22      3      30 |                                                   H        H                                   |
| S 23      2      14 |                                                            H                                   |
| S 24      0       0 |                                                                                                |
| M 25      1      14 |                                                         H                                      |
| T 26      3      26 |                                 H                             S S                              |
| W 27      0       0 |                                                                                                |
| T 28      5      33 |                                 I                                           SSS    S           |
| F 29      0       0 |                                                                                                |
| S 30      0       0 |                                                                                                |
| S 31      0       0 |                                                                                                |
------------------------------------------------------------------------------------------------------------------------
LEGEND :      H FOR HARDWARE
              S FOR SOFTWARE                      STATISTICS
              O FOR OPERATIONAL
              U FOR UNEXPLAINED
              I FOR LATE IPL

                              TOTAL SCHEDULED HOURS OF PRODUCTION :  537
                              TOTAL DOWNTIME (MN)  :  416 , AVG/DAY :  13.42 , AVG/PROD HOUR :   0.40
                              TOTAL REIPL'S        :   33 , AVG/DAY :   1.06
                              DOWNTIME RATE IS     :  1.29 PERCENT OF SCHEDULED PRODUCTION HOURS
```

HSJS MONTHLY STATISTICS

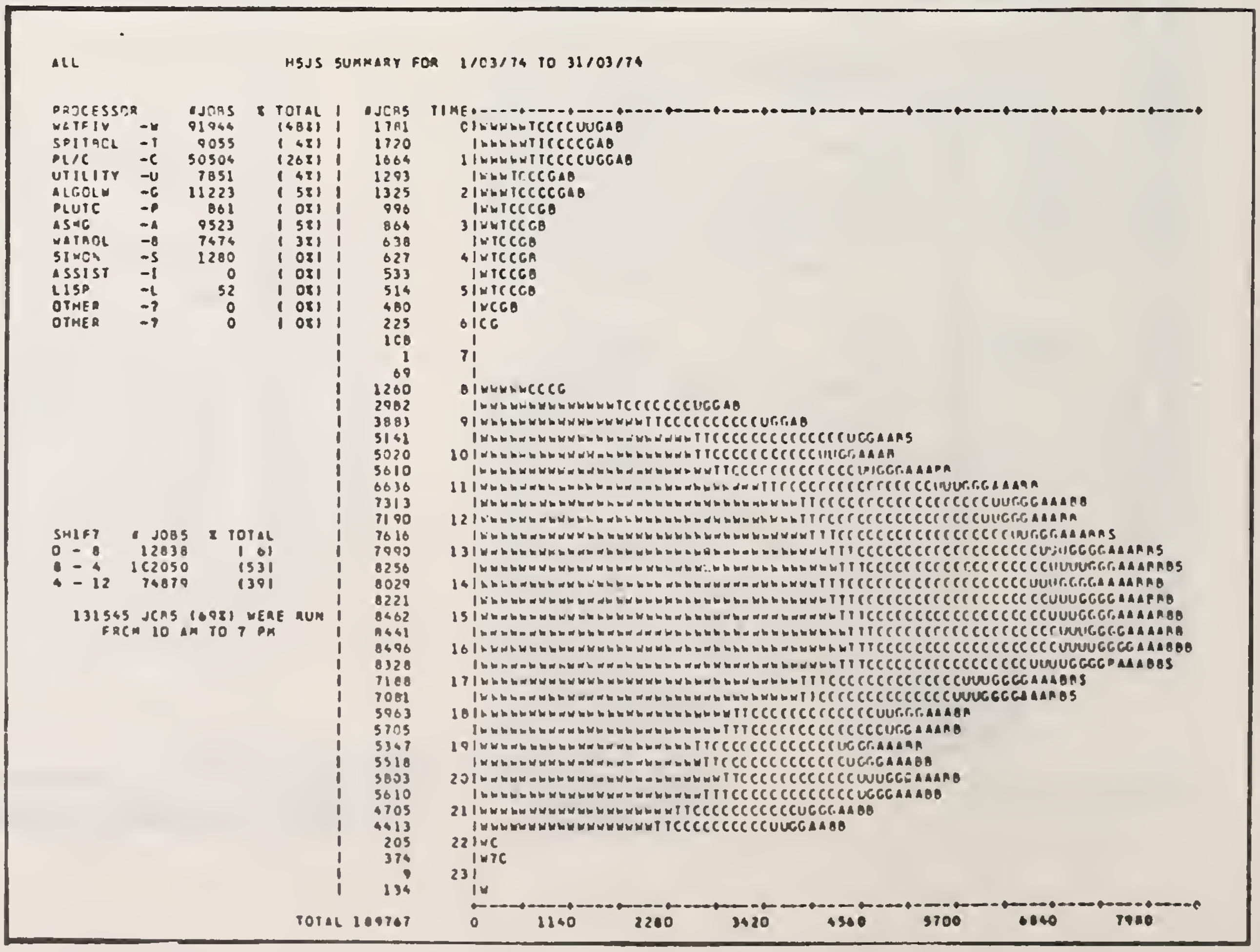
During March 1974, 189,767 jobs were processed compared with 158,437 jobs for March 1973, for an increase of 19.8%. 33,608 more jobs were processed in March 1974 than February 1974.

Mark Tapia



```
                         HSJS RESOURCE USAGE BY PROCESSOR FOR  1/03/74 TO 31/03/74

                | TOTAL  |  TOTAL  | TOTAL   |  TOTAL   ||  AVG   |  AVG  |  AVG  ||
                | #JOBS  |  CPU    | CARDS   |  LINES   ||CPU*10  | CARDS | LINES ||
------------------------------------------------------------------------------------
WATFIV    -W |  91944 |   91457 |10656066 |14231517 ||      9 |   115 |   154 ||
SPITBOL   -T |   9055 |   10019 | 1075324 | 1691160 ||     11 |   118 |   186 ||
PL/C      -C |  50504 |   98222 | 8520011 |14366654 ||     19 |   168 |   284 ||
UTILITY   -U |   7851 |    1185 |  875680 | 1060131 ||      1 |   112 |   135 ||
ALGOLW    -G |  11223 |   11469 | 1686828 | 2505664 ||     10 |   150 |   223 ||
PLUTO     -P |    861 |    1428 |   82098 |  136369 ||     16 |    95 |   158 ||
ASMG      -A |   9523 |   17160 | 1403169 | 2852228 ||     18 |   147 |   299 ||
WATBOL    -B |   7474 |   20881 | 2998756 | 2946602 ||     27 |   401 |   394 ||
SIMON     -S |   1280 |      80 |   84786 |   99846 ||      0 |    66 |    78 ||
ASSIST    -I |      0 |       0 |       0 |       0 ||      0 |     0 |     0 ||
LISP      -L |     52 |      21 |    6478 |   10248 ||      4 |   124 |   197 ||
OTHER     -? |      0 |       0 |       0 |       0 ||      0 |     0 |     0 ||
OTHER     -? |      0 |       0 |       0 |       0 ||      0 |     0 |     0 ||
------------------------------------------------------------------------------------
        TOTAL 189767     251922  27393196  39900419          13     144     210
```



```
ALL                       HSJS SUMMARY FOR  1/03/74 TO 31/03/74

PROCESSOR        #JOBS   % TOTAL |  #JOBS  TIME+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
WATFIV    -W     91944     (48%) |   1781     0|WWWWWTCCCCUUGAB
SPITBOL   -T      9055     ( 4%) |   1720      |WWWWWTICCCCGAB
PL/C      -C     50504     (26%) |   1664     1|WWWWWTTCCCCUGGAB
UTILITY   -U      7851     ( 4%) |   1293      |WWWTCCCGAB
ALGOLW    -G     11223     ( 5%) |   1325     2|WWWTCCCCGAB
PLUTO     -P       861     ( 0%) |    996      |WWTCCCGB
ASMG      -A      9523     ( 5%) |    864     3|WWTCCGB
WATBOL    -B      7474     ( 3%) |    638      |WTCCGB
SIMON     -S      1280     ( 0%) |    627     4|WTCCGB
ASSIST    -I         0     ( 0%) |    533      |WTCCGB
LISP      -L        52     ( 0%) |    514     5|WTCCGB
OTHER     -?         0     ( 0%) |    480      |WCGB
OTHER     -?         0     ( 0%) |    225     6|CG
                                 |    108      |
                                 |      1     7|
                                 |     69      |
                                 |   1260     8|WWWWWCCCG
                                 |   2982      |
                                 |   3883     9|
                                 |   5141      |
                                 |   5020    10|
                                 |   5610      |
                                 |   6636    11|
                                 |   7313      |
                                 |   7190    12|
SHIFT    # JOBS   % TOTAL        |   7616      |
0 - 8     12838     ( 6)         |   7990    13|
8 - 4    102050     (53)         |   8256      |
4 - 12    74879     (39)         |   8029    14|
                                 |   8221      |
  131545 JOBS (69%) WERE RUN     |   8462    15|
      FROM 10 AM TO 7 PM         |   8441      |
                                 |   8496    16|
                                 |   8328      |
                                 |   7188    17|
                                 |   7081      |
                                 |   5963    18|
                                 |   5705      |
                                 |   5347    19|
                                 |   5518      |
                                 |   5803    20|
                                 |   5610      |
                                 |   4705    21|
                                 |   4413      |
                                 |    205    22|WC
                                 |    374      |W7C
                                 |      9    23|
                                 |    134      |W
                                               +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
                          TOTAL 189767         0        1140      2280      3420      4560      5700      6840      7980
```

INTERACTIVE SYSTEMS RELIABILITY

The uptimes achieved for the month of March for each of APL, ATS, and CPS were 99.23%, 99.46% and 99.53%, respectively. The total number of scheduled hours of operation during the month of March was 489.5. In addition to the scheduled time, APL, ATS and CPS were also available for approximately 149 hours of unattended weekend operation.

The following table shows the time lost out of scheduled hours of production due to system failures for each of the systems: seven unscheduled IPL's were required as a result of the failures.

Kam Jain

DATE	DOWNTIME (minutes)			REASON
	APL	ATS	CPS	
Mon. Mar. 4	119	5	7	*APL Histogram (SOFTWARE)
Wed. Mar. 13	-	25	5	ATS S80A (SOFTWARE)
Mon. Mar. 18	23	26	28	Late IPL due to System Backup
Tue. Mar. 19	17	18	20	*Solid System, Test I/O (HARDWARE)
"	15	18	20	*Solid System (ATS SOFTWARE)
Wed. Mar. 20	16	18	20	*Solid System (Undetermined)
Sat. Mar. 23	-	3	-	ATS Software
Mon. Mar. 25	17	15	12	*Channel Error (HARDWARE)
"	9	10	12	*Solid System Tscan (SOFTWARE)
Tue. Mar. 26	9	11	13	*Machine Check (HARDWARE)
Sun. Mar. 31	-	9	-	ATS Software
Total	225	158	137	*IPL Required

System Failures March 1 to March 31, 1974

1. NEW AND PLANNED SERVICES

i) PDP-11GT/40 Intelligent Terminal System

(AVALIABLE NOW)

This system allows CRF's PDP-11 to act as an ASCII terminal to either APL or TSO. The current system uses the GT40 (PDP-11/10 with graphical display) display screen as an output device for TSO or the full APL character set, with a 30 cps console printer as an optional alphanumeric hard copy log. Input is initially via the PDP-11 console keyboard; input from a sonic digitizing tablet, disk data sets or punched cards are available under keyboard control.

Documentation for this system is currently underway, and should be available shortly after publication of this newsletter.

For further information or a demonstration of this sytem, please contact Krishna Patnaik at 928-8853.

ii) Planned Additions and Extensions to this Service

-support of the GT40 graphics device under control of APL, including APL controlled animation.
(UNDERWAY)

-support of an analogue to digital conversion system connected to the PDP-11, sending data directly into TSO or APL.
(UNDERWAY)

-a "portable" PDP-11 system employing an APL/ASCII console device and an A to D converter system which may be moved into the users own lab.
(PLANNED)

-a less expensive and more compact "micro-computer" intelligent terminal system to perform similar functions to the above.
(PROPOSED as a joint CRF/CSRG research project)

2. NEW EQUIPMENT

i) DEC GT44

Delivery is expected imminently, of a DEC GT44 computer system. The GT44 is a larger version of the GT40 system already installed in the CRF lab. This system includes the following:

-PDP-11/40 CPU with 16K words of memory.

-2 DEC Pak disk drives of 1.2 M words each;

-a 17" display unit, software compatible with the GT40 currently at CRF.

In addition, this system will have the following connected to it soon after delivery:

-12K additional memory (total 28K);

-800/1600 BPI tape drive;

-Lab Peripheral System (A to D, D to A);

...cont'd

NEW EQUIPMENT Cont'd...

-paper tape reader/punch;

-OMR/PUNCHED card reader;

-600 LPM line printer;

-asynchronous communications interface.

The following software will be available on this system:

-RT-11 real time single user operating system.

-MACRO assembler;

-LINKING loader;

-BASIC/RT-11, a fast version of BASIC PLUS, including graphics support for the diplay screen;

-FORTRAN-IV (available sometime in June or July);

-LAB APPLICATIONS software;

-A to D and D to A conversions;

-digital filtering;

-Fast Fourier Transform's displayed on GT44 graphics device;

ii) Digitizing LINE DRAWINGS for FOCAL, APL or TSO (AVAILABLE NOW)

This system allows the user to digitize a line drawing (e.g. maps, strip chart recordings, hand writing) and store the data in file on the PDP-11 disk. This data may then be processed and displayed on the PDP-11 graphics device using FOCAL (a BASIC like interactive language for the PDP-11), and/or transferred as ASCII numbers to APL or TSO via the intelligent terminal system described above.

3. DEPARTURE OF THE 360/44

As most CRF uses know, the IBM 360/44 service at CRF is being discontinued about the end of June this year. Prior to this time, all currently supported services of the 360/44 will be supported either on other equipment at CRF or on other systems at UTCC. Alternative solutions for the following services are currently under development:

i) RADDT (Remote Analog Digital Data Terminal A to D and D to A services).

ii) Cross assemblers for the PDP-11 and PDP-8 minicomputers, producing punched paper tape.

iii) Direct transfer of PDP-11 object code, generated under OS, to a PDP-11.

iv) Calcomp microfilm services.

v) 2250 graphics support.

If you feel that any current or desirable service is being or may be ignored, please contact Dennis Smith at 928-4086 or Krishna Patnaik at 928-8853.

...cont'd

4. CRF ACCESS CODES NOW TIED TO UTCC ACCOUNTS

CRF access codes are no longer logically unconnected with UTCC accounts. If you have a valid UTCC account, you may obtain a CRF access code from Krishna Patnaik in the CRF lab, Room 217, Sandford Fleming Labs. All that is required is the signature of the holder of the UTCC account.

CRF access codes will still be the same two letters followed by two digits. A CRF access may be used on any of CRF's servicesand is valid until it, or the corresponding UTCC account, is cancelled.

Dennis Smith

USIG NEWS

EDITOR: G. Taylor,
Queen's University
DATE March, 1974

Purpose of This Newsletter

USIG NEWS was created by the User Services Interest Group as a supplement to newsletters published by Ontario university computing centres. Its purpose will be to announce items of interest to users that would not normally be included in regular newsletters. Under present schemes of newsletter distribution users subscribing to one computing centre newsletter seldom get an opportunity to read the others produced in Ontario with the result that computing centre projects at one university may pass virtually unnoticed by interested users outside that university. USIG NEWS is the first attempt to improve communication amongst all computing centres, especially out to the user level. Contributions to USIG NEWS will come primarily from the USIG representative at each computing centre.

What is USIG

User Services Interest Group (USIG) members consist of those people at Ontario university computing centres that provide the User Services function. While their specific duties vary they are essentially the group within each computing centre that have daily user contact. They are, by and large, the interface between the computing centre and its users. USIG has chosen four areas for improvement to the user interface; documentation, accounting systems, refinement of program library cataloging and exchange of programs and the creation of USIG NEWS. These projects are well underway - progress and developments will be reported in USIG NEWS.

Access to the 1971 Census Data

Statistics Canada distributes data from the 1971 Census aggregated by geographical area. This data is the single most comprehensive and useful service of information on the Canadian population, and, as such, is of great interest to the academic, governmental and private sectors. The Data Bank of the Institute for Behavioural Research at York University has completed a project designed to increase the availability of this data resource by making it available in a variety of formats suited to research and teaching applications.

The result of that project is a three-part program of Census data dissemination. The Data Bank will provide the aggregate data from the 1971 Census; first at the Enumeration Area Level (averaging about 500 people each) and later at the Census Tract, Area Aggregate, County and Municipal Level.

...2

Additional documentation describing the specific census variables available and the details of each service can be obtained by writing Census Project, Data Bank, Institute for Behavioural Research, York University, 4700 Keele Street, Downsview, Ontario.

Queen's/Carleton/Ottawa Co-operative Venture

Plans are well under way for a co-operative effort among the three Eastern Ontario university computing centres. A HASP TO HASP link is planned between Ottawa and Queen's Universities for transmission of batch jobs and possibly a high speed job stream. APL will be offered by Queen's to Ottawa and Carleton with Carleton providing BASIC and interactive FORTRAN to the other two universities.

The 5th Ontario Universities Computing Conference

The 5th Ontario Universities Computing Conference, sponsored by the Council of Ontario Universities, will be held on the 3rd and 4th of June 1974, at the University of Western Ontario. The Conference Chairman is Mr. George T. Lake, Director of the Computing Centre at U.W.O.

The theme of the Conference will be "University Computing Centre Management" which will encompass such topics as planning, funding, employee relations and legal aspects. The Conference should appeal particularly to senior managers, directors of computing centres, and computer policy committee members in Canadian universities and colleges.

The Conference registration fee will be $35.00.

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
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ASSOCIATE DIRECTOR		
Al Heyworth	49 St.Geo	4936
ASSOCIATE DIRECTOR		
Dave McNaughton	SF143	6281
USER LIAISON OFFICER		
Bill Greene	SF128A	2694
Information Office	SF128	4990 or 4991
ADMINISTRATION MANAGER		
Jerry Palter	SF137	8948
AUTHORIZATION CLERKS		
Yvonne Bowen (Interactive)	49 St.Geo	8703
Maggie Niemi (GPJS, TSO)	SF143	5557
Krishna Patnaik (CRF)	SF207	8853
Edith Kovacs (7094)	NP1207	7094
S/370 SERVICES		
MANAGER, S/370 SERVICES		
Stan Yagi	SF113	7331
MANAGER, S/370 OPERATIONS		
Derry Cox	SF113	7092
MANAGER, S/370 SOFTWARE		
Rein Mikkor	SF113	5058
SYSTEM HARDWARE SUPERVISOR		
Eugene Siciunas	SF114	4967
PROGRAM ADVISERS	SF117	8599
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MANAGER		
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CAL COORDINATOR		
Ford Clancy	49 St.Geo	6021
7094 SERVICES		
MANAGER		
Joyce Walton	BT1207	7094
COMPUTER RESEARCH FACILITY		
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Dennis Smith	SF214	4086
JOB STATUS QUERIES:		
SYSTEM/370		7373
7094		7094
INTERACTIVE TERMINAL SYSTEMS:		
System Status		6234
APL		7200
ATS		7100
CPS		6200
TSO:		
2741 Terminal Malfunctions		7107
2741		7303
TTY		7390

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream and TSO services
- 3072K bytes of memory
- 1 drum
- 12 disk drives IBM (3330)
- 8 disk drives IBM (2314)
- 6 magnetic tape drives (4 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 7 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 16 disk drives (2314)
- 2 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL, ATS, and CPS

7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

IBM/360 MODEL 44

- located in SF207
- 256K core
- 10 disk drives (8 2314's and 2 2311's)
- 2 2401 tape drives
- 2 1403 printers
- 2 2501 card readers
- 2701 data adapter
- 2250 video display unit
- RADDTS
- Calcomp microfilm plotter
- minicomputers
- VW01 Digitizing Tablet
- DEC GT40

UNIVERSITY OF TORONTO
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